Climate Change and Sustainable Housing

in the Northern Territory

What is causing the climate to change?

Global warming, sometimes called the enhanced greenhouse effect, is caused by an increase in greenhouse gases in the Earth's atmosphere. The amount of greenhouse gases such as carbon dioxide has increased significantly as a result of human activity.

The increase in greenhouse gas emissions is causing the Earth's climate to change at a faster rate than previously experienced.

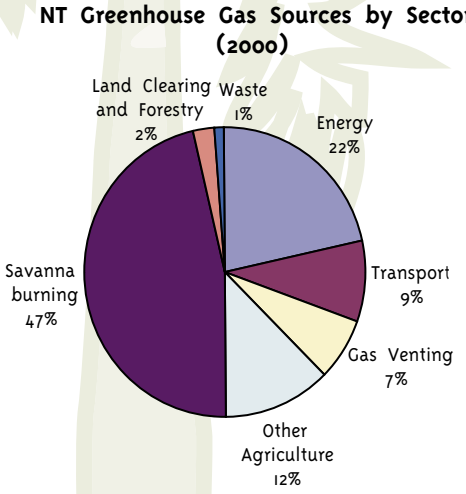
How much greenhouse gas is emitted by the Northern Territory?

In 2000 (the most recent figures available), the Northern Territory emitted 14.4 million tonnes of greenhouse gases. This is about 2.7% of Australia's total greenhouse gas emissions.

Where do the greenhouse gases come from?

The agriculture sector, including savanna burning, and the energy sector are the major sources of emissions (see Figure 1).

Figure 1: 2000 NT greenhouse gas emissions by source (NT Greenhouse Unit)



How do households contribute to greenhouse gas emissions?

Australian households contribute about 20% of Australia's greenhouse gas emissions – more than 18 tonnes per household per year. This results from everyday activities such as electricity use, transport, and the decay of household waste in landfills.

How can sustainable housing help?

We can reduce greenhouse gas emissions by reducing energy use. Sustainable house design, informed purchasing choices and the efficient use of energy can help. These actions can also save households money.

Sustainable house design in the Territory

- Position house to face north
- Allow for natural cross-ventilation
- Use eaves to control sunlight through windows
- Insulate walls and roofs
- Seal gaps around doors and windows
- Paint your roof a light colour to reflect heat
- Use curtains and blinds to reduce summer heat entering and winter heat escaping
- Plan your garden to aid cooling and heating

Efficient use of energy and water

- Choose energy efficient appliances
- Install water efficient shower heads
- Install a solar hot water system
- Use energy efficient lighting
- Wash clothes in cold water
- Reduce standby power by turning appliances off at the wall when not in use
- Use heating and cooling efficiently
- Reduce household waste going to landfill

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Northern Territory Government
Department of Infrastructure, Planning and Environment

What are the climate change projections for the Territory?

The Commonwealth Scientific and Industrial Research Organisation (CSIRO) has used climate models to estimate future changes in the Territory's climate.

Projected changes in average temperature

The Northern Territory is expected to warm 0.2 to 2.2C by 2030, and 0.8 to 7.2C by 2070 relative to 1990. As Figure 2 shows, least warming is expected in the Top End, and most warming in the south-west.

Changes in average temperature are expected to result in an increased number of days with extreme temperatures.

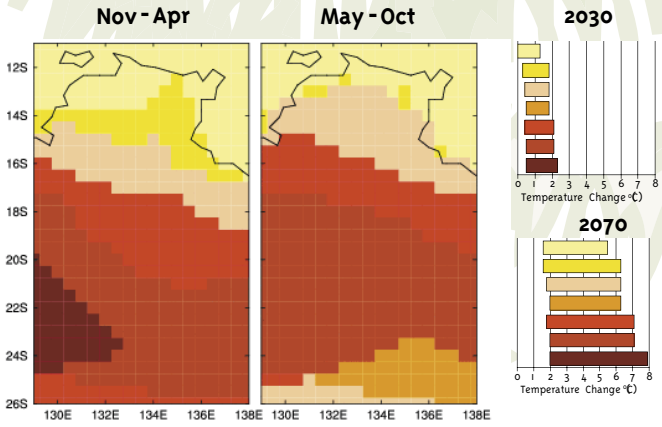


Figure 2: Ranges of projected change in temperature for 2030 and 2070

Projected changes in average rainfall

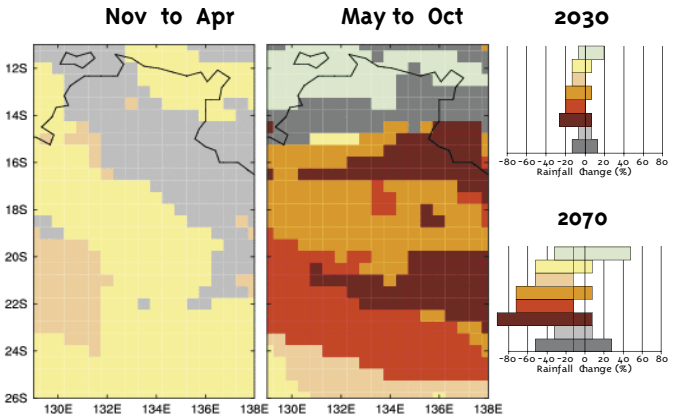
Wet season rainfall is projected to decrease over most of the Territory by 2070, with little change in a 400km wide strip running from Darwin to Camooweal.

Dry season rainfall is also likely to decrease, except near Darwin, which is likely to become wetter.

In Alice Springs, predictions are for drier conditions in the future, especially from July to October.

Figure 3 shows projected changes in rainfall.

Figure 3: Ranges of projected change in rainfall for 2030 and 2070



Projected changes in moisture balance

Changes in temperature and rainfall will affect the net amount of moisture available in the atmosphere. Available atmospheric moisture in the Northern Territory is likely to decrease in the future, particularly in Central Australia.

Cyclones and storm surge

The intensity of tropical cyclones is likely to increase due to global warming. It is not certain whether the frequency of cyclones will change. Sea level rise and increased storm surge are expected to affect coastal areas.

How can we adapt housing to the likely impacts of climate change?

House design should address the likely increased exposure to extreme storm events, and comply with relevant building codes.

Houses designed for natural cooling will reduce reliance on air conditioning and be cheaper to live in as temperatures rise.

Houses should be designed to use water more efficiently as water becomes scarcer in some regions.

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